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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,208	11/19/2001	Kazuyuki Ohhashi	P21699	8111
7055	7590	03/20/2006	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			AGHDAM, FRESHTEH N	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Response to Arguments

Applicant's arguments see pages 6-8; filed 12/27/2005, with respect to the rejection(s) of claim(s) 5-12 under McVey (US 6,574,286), and Thorson (US 6,101,225) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Sato (US 5,956,328); the instant application's disclosed prior art; and Derryberry (US 6,728,307).

Drawings

The drawings are objected to because the description of means 212 should be changed from "SINE" to "SIGN" in figure 2A.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

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of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-14 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (US 5,956,328), further in view of the instant application's disclosed prior art and Omori (US 6,239,666).

As to claims 13-14 and 20, Sato teaches a phase offset calculation circuit (Fig. 1, means 102, 201; Fig. 2, means 201, 302, and 303) comprising a sign inversion circuit that performs a sign inversion of input signed binary data to a phase offset Θ of multiple 90° ; a phase offset circuit that performs a phase offset calculation smaller than 90° with the signal output from the phase shifter 201 (Fig. 1, means 202; Col. 4, Lines 44-67; Col. 5, Lines 1-53). Sato is silent about an amplitude adjustment circuit that adjusts the amplitude of the phase offset signal after the sign inversion. The instant application's disclosed prior art teaches an amplitude adjustment circuit that adjusts the amplitude of

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the phase offset signal before the phase offset calculator (Fig. 4B, means 406 and 407). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of the instant application's disclosed prior art with Sato in order to improve the level of a reception signal and clearly distinguish between interference signals from other mobile stations and the original reception signal (Pg. 2, Lines 1-5). Additionally, Omori teaches a modulator that uses a sign inversion circuit to invert the signal of the input signed binary data and adjusts the amplitude of the phase offset signal after the sign inversion (Fig. 3, means 31 and 36; Col. 2, Lines 29-64). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Omori with Sato and the instant application's disclosed prior art in order to make the amplitude uniform for the modulation, wherein the modulator is capable of reducing the circuit scale and power consumption to obtain a desired transmission signal (Col. 1, Lines 32-36; Col. 2, Lines 56-64).

As to claim 16, Sato teaches a transmission apparatus (Fig. 1, means 102, 201; Fig. 2, means 201, 302, and 303) comprising a sign inversion circuit that performs a sign inversion of input signed binary data to a phase offset Θ ($\Theta = 90x + y$: $x = 0, +/- 1, +/- 2, \dots, +/- 4, 0 < y < 90$); a phase offset circuit that performs a phase offset calculation smaller than 90° with the signal output from the phase shifter 201 (Fig. 1, means 202; Col. 4, Lines 44-67; Col. 5, Lines 1-53). Sato is silent about an amplitude adjustment circuit that adjusts the amplitude of the phase offset signal after the sign inversion. The instant application's disclosed prior art teaches an amplitude adjustment circuit that adjusts the amplitude of the phase offset signal before the phase offset calculator (Fig.

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4B, means 406 and 407); and a transmission controller that provides control information to the signal point mapping circuit based on a message included in a reception signal from the other end of a communication system (Pg. 1, Lines 22-28; Pg. 2, Lines 1-5). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of the instant application's disclosed prior art with Sato in order to improve the level of a reception signal and clearly distinguish between interference signals from other mobile stations and the original reception signal (Pg. 2, Lines 1-5). Additionally, Omori teaches a modulator that uses a sign inversion circuit to invert the signal of the input signed binary data and adjusts the amplitude of the phase offset signal after the sign inversion (Fig. 3, means 31 and 36; Col. 2, Lines 29-64). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Omori with Sato and the instant application's disclosed prior art in order to make the amplitude uniform for the modulation, wherein the modulator is capable of reducing the circuit scale and power consumption to obtain a desired transmission signal (Col. 1, Lines 32-36; Col. 2, Lines 56-64).

As to claim 17, Sato teaches the phase offset circuit comprises a fixed phase offset circuit that provides a predetermined amount of a fixed phase offset (Fig. 1, means 202), and determines whether to provide the phase offset to an input signal based on the control information of the phase offset circuit (Fig. 1, means CLK3).

As to claims 18-19, The instant application's disclosed prior art further teaches that controlling the phase and amplitude can be performed for every transmit channel (Pg. 2, Lines 12-15).

Allowable Subject Matter

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 15, the prior art of record fails to teach the limitation "wherein said phase offset circuit controls a total phase offset amount with the phase offset implemented by the sign inversion circuit to become a desired offset amount."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hileman et al (US 3,497,625); Temerinac et al (US 6,215,830); Horii et al (US 6,678,342); and Derryberry et al (US 6,728,307).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is (571) 272-6037. The examiner can normally be reached on Monday through Friday 9:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Freshteh Aghdam
March 8, 2006


KEVIN BURD
PRIMARY EXAMINER